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RAW SEQUENCE LISTING   DATE: 03/25/2002
PATENT APPLICATION: US/09/996,617   TIME: 15:24:33

Input Set : A:\07334-340001.TXT
Output Set: N:\CRF3\03252002\I996617.raw

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 4 <110> APPLICANT: Bertin, John
 7 <120> TITLE OF INVENTION: NOVEL MOLECULES OF THE CARD-RELATED
 8         PROTEIN FAMILY AND USES THEREOF
11 <130> FILE REFERENCE: 07334-340001
13 <140> CURRENT APPLICATION NUMBER: 09/996,617
14 <141> CURRENT FILING DATE: 2001-11-27
16 <150> PRIOR APPLICATION NUMBER: 09/931,071
17 <151> PRIOR FILING DATE: 2001-08-15
19 <150> PRIOR APPLICATION NUMBER: 09/428,252
20 <151> PRIOR FILING DATE: 1999-10-27
22 <150> PRIOR APPLICATION NUMBER: 09/340,620
23 <151> PRIOR FILING DATE: 1999-06-28
25 <160> NUMBER OF SEQ ID NOS: 10
27 <170> SOFTWARE: FastSEQ for Windows Version 4.0
29 <210> SEQ ID NO: 1
30 <211> LENGTH: 5444
31 <212> TYPE: DNA
32 <213> ORGANISM: Homo sapiens
34 <220> FEATURE:
35 <221> NAME/KEY: CDS
36 <222> LOCATION: (523)...(4809)
38 <400> SEQUENCE: 1
39 gccccagggc ctggagaggt ctgaagaaac ctgggagcca gcagcccggg gctccactct    60
40 gggttctgaa agcccattcc ctgctctgcg gctcctccca ccccacctct tctcagcctt   120
41 gcagctcaag ggttgatctc aggagtccag gacccaggag agggaagaat ctgaggaaca   180
42 cagaacagtg agcgttgccc acaccccatc tcccgtcacc acatctcccc tcaccctcac   240
43 cctccctgcc tggccctgga ccccatccca ggacctccct atcagctgac ttcttccagt   300
44 gtcttgcagg cccctctggg ctcctccctc ccctggcttt tcctaccact ccccctctat   360
45 cggcgtctat ctgtaggtgc cctgggattt ataaaactgg gttccgaatg ctgaataaga   420
46 gacggtaaga gccaaggcaa aggacagcac tgttctctgc ctgcctgata ccctcaccac   480
47 ctgggaacat cccccagaca ccctcttaac tccgggacag ag atg gct ggc gga     534
48                                                  Met Ala Gly Gly
49                                                   1
51 gcc tgg ggc cgc ctg gcc tgt tac ttg gag ttc ctg aag aag gag gag    582
52 Ala Trp Gly Arg Leu Ala Cys Tyr Leu Glu Phe Leu Lys Lys Glu Glu
53  5               10                  15                  20
55 ctg aag gag ttc cag ctt ctg ctc gcc aat aaa gcg cac tcc agg agc    630
56 Leu Lys Glu Phe Gln Leu Leu Leu Ala Asn Lys Ala His Ser Arg Ser
57                 25                  30                  35
59 tct tcg ggt gag aca ccc gct cag cca gag aag acg agt ggc atg gag    678
60 Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr Ser Gly Met Glu
61             40                  45                  50
63 gtg gcc tcg tac ctg gtg gct cag tat ggg gag cag cgg gcc tgg gac    726
```

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 64 Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln Arg Ala Trp Asp
 65          55                  60                  65
 67 cta gcc ctc cat acc tgg gag cag atg ggg ctg agg tca ctg tgc gcc      774
 68 Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg Ser Leu Cys Ala
 69      70                  75                  80
 71 caa gcc cag gaa ggg gca ggc cac tct ccc tca ttc ccc tac agc cca      822
 72 Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe Pro Tyr Ser Pro
 73  85                  90                  95                 100
 75 agt gaa ccc cac ctg ggg tct ccc agc caa ccc acc tcc acc gca gtg      870
 76 Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr Ser Thr Ala Val
 77              105                 110                 115
 79 cta atg ccc tgg atc cat gaa ttg ccg gcg ggg tgc acc cag ggc tca      918
 80 Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys Thr Gln Gly Ser
 81              120                 125                 130
 83 gag aga agg gtt ttg aga cag ctg cct gac aca tct gga cgc cgc tgg      966
 84 Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser Gly Arg Arg Trp
 85          135                 140                 145
 87 aga gaa atc tct gcc tca ctc ctc tac caa gct ctt cca agc tcc cca     1014
 88 Arg Glu Ile Ser Ala Ser Leu Leu Tyr Gln Ala Leu Pro Ser Ser Pro
 89      150                 155                 160
 91 gac cat gag tct cca agc cag gag tca ccc aac gcc ccc aca tcc aca     1062
 92 Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala Pro Thr Ser Thr
 93 165                 170                 175                 180
 95 gca gtg ctg ggg agc tgg gga tcc cca cct cag ccc agc cta gca ccc     1110
 96 Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro Ser Leu Ala Pro
 97              185                 190                 195
 99 aga gag cag gag gct cct ggg acc caa tgg cct ctg gat gaa acg tca     1158
100 Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu Asp Glu Thr Ser
101              200                 205                 210
103 gga att tac tac aca gaa atc aga gaa aga gag aga gag aaa tca gag     1206
104 Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg Glu Lys Ser Glu
105          215                 220                 225
107 aaa ggc agg ccc cca tgg gca gcg gtg gta gga acg ccc cca cag gcg     1254
108 Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr Pro Pro Gln Ala
109      230                 235                 240
111 cac acc agc cta cag ccc cac cac cac cca tgg gag cct tct gtg aga     1302
112 His Thr Ser Leu Gln Pro His His His Pro Trp Glu Pro Ser Val Arg
113 245                 250                 255                 260
115 gag agc ctc tgt tcc aca tgg ccc tgg aaa aat gag gat ttt aac caa     1350
116 Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu Asp Phe Asn Gln
117              265                 270                 275
119 aaa ttc aca cag ctg cta ctt cta caa aga cct cac ccc aga agc caa     1398
120 Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His Pro Arg Ser Gln
121              280                 285                 290
123 gat ccc ctg gtc aag aga agc tgg cct gat tat gtg gag gag aat cga     1446
124 Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val Glu Glu Asn Arg
125              295                 300                 305
127 gga cat tta att gag atc aga gac tta ttt ggc cca ggc ctg gat acc     1494
128 Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro Gly Leu Asp Thr
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129     310                    315                    320
131 caa gaa cct cgc ata gtc ata ctg cag ggg gct gct gga att ggg aag    1542
132 Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala Gly Ile Gly Lys
133 325                    330                    335                    340
135 tca aca ctg gcc agg cag gtg aag gaa gcc tgg ggg aga ggc cag ctg    1590
136 Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly Arg Gly Gln Leu
137                    345                    350                    355
139 tat ggg gac cgc ttc cag cat gtc ttc tac ttc agc tgc aga gag ctg    1638
140 Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser Cys Arg Glu Leu
141                    360                    365                    370
143 gcc cag tcc aag gtg gtg agt ctc gct gag ctc atc gga aaa gat ggg    1686
144 Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile Gly Lys Asp Gly
145          375                    380                    385
147 aca gcc act ccg gct ccc att aga cag atc ctg tct agg cca gag cgg    1734
148 Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser Arg Pro Glu Arg
149          390                    395                    400
151 ctg ctc ttc atc ctc gat ggt gta gat gag cca gga tgg gtc ttg cag    1782
152 Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly Trp Val Leu Gln
153 405                    410                    415                    420
155 gag ccg agt tct gag ctc tgt ctg cac tgg agc cag cca cag ccg gcg    1830
156 Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln Pro Gln Pro Ala
157                    425                    430                    435
159 gat gca ctg ctg ggc agt ttg ctg ggg aaa act ata ctt ccc gag gca    1878
160 Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile Leu Pro Glu Ala
161          440                    445                    450
163 tcc ttc ctg atc acg gct cgg acc aca gct ctg cag aac ctc att cct    1926
164 Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln Asn Leu Ile Pro
165          455                    460                    465
167 tct ttg gag cag gca cgt tgg gta gag gtc ctg ggg ttc tct gag tcc    1974
168 Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly Phe Ser Glu Ser
169          470                    475                    480
171 agc agg aag gaa tat ttc tac aga tat ttc aca gat gaa agg caa gca    2022
172 Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp Glu Arg Gln Ala
173 485                    490                    495                    500
175 att aga gcc ttt agg ttg gtc aaa tca aac aaa gag ctc tgg gcc ctg    2070
176 Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu Leu Trp Ala Leu
177                    505                    510                    515
179 tgt ctt gtg ccc tgg gtg tcc tgg ctg gcc tgc act tgc ctg atg cag    2118
180 Cys Leu Val Pro Trp Val Ser Trp Leu Ala Cys Thr Cys Leu Met Gln
181          520                    525                    530
183 cag atg aag cgg aag gaa aaa ctc aca ctg act tcc aag acc acc aca    2166
184 Gln Met Lys Arg Lys Glu Lys Leu Thr Leu Thr Ser Lys Thr Thr Thr
185          535                    540                    545
187 acc ctc tgt cta cat tac ctt gcc cag gct ctc caa gct cag cca ttg    2214
188 Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln Ala Gln Pro Leu
189          550                    555                    560
191 gga ccc cag ctc aga gac ctc tgc tct ctg gct gct gag ggc atc tgg    2262
192 Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala Glu Gly Ile Trp
193 565                    570                    575                    580
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195 caa aaa aag acc ctt ttc agt cca gat gac ctc agg aag cat ggg tta    2310
196 Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg Lys His Gly Leu
197             585                 590                 595
199 gat ggg gcc atc atc tcc acc ttc ttg aag atg ggt att ctt caa gag    2358
200 Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly Ile Leu Gln Glu
201             600                 605                 610
203 cac ccc atc cct ctg agc tac agc ttc att cac ctc tgt ttc caa gag    2406
204 His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu Cys Phe Gln Glu
205             615                 620                 625
207 ttc ttt gca gca atg tcc tat gtc ttg gag gat gag aag ggg aga ggt    2454
208 Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu Lys Gly Arg Gly
209     630                 635                 640
211 aaa cat tct aat tgc atc ata gat ttg gaa aag acg cta gaa gca tat    2502
212 Lys His Ser Asn Cys Ile Ile Asp Leu Glu Lys Thr Leu Glu Ala Tyr
213 645                 650                 655                 660
215 gga ata cat ggc ctg ttt ggg gca tca acc aca cgt ttc cta ttg ggc    2550
216 Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg Phe Leu Leu Gly
217             665                 670                 675
219 ctg tta agt gat gag ggg gag aga gag atg gag aac atc ttt cac tgc    2598
220 Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn Ile Phe His Cys
221             680                 685                 690
223 cgg ctg tct cag ggg agg aac ctg atg cag tgg gtc ccg tcc ctg cag    2646
224 Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val Pro Ser Leu Gln
225             695                 700                 705
227 ctg ctg ctg cag cca cac tct ctg gag tcc ctc cac tgc ttg tac gag    2694
228 Leu Leu Leu Gln Pro His Ser Leu Glu Ser Leu His Cys Leu Tyr Glu
229     710                 715                 720
231 act cgg aac aaa acg ttc ctg aca caa gtg atg gcc cat ttc gaa gaa    2742
232 Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala His Phe Glu Glu
233 725                 730                 735                 740
235 atg ggc atg tgt gta gaa aca gac atg gag ctc tta gtg tgc act ttc    2790
236 Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu Val Cys Thr Phe
237             745                 750                 755
239 tgc att aaa ttc agc cgc cac gtg aag aag ctt cag ctg att gag ggc    2838
240 Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln Leu Ile Glu Gly
241             760                 765                 770
243 agg cag cac aga tca aca tgg agc ccc acc atg gta gtc ctg ttc agg    2886
244 Arg Gln His Arg Ser Thr Trp Ser Pro Thr Met Val Val Leu Phe Arg
245             775                 780                 785
247 tgg gtc cca gtc aca gat gcc tat tgg cag att ctc ttc tcc gtc ctc    2934
248 Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu Phe Ser Val Leu
249     790                 795                 800
251 aag gtc acc aga aac ctg aag gag ctg gac cta agt gga aac tcg ctg    2982
252 Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser Gly Asn Ser Leu
253 805                 810                 815                 820
255 agc cac tct gca gtg aag agt ctt tgt aag acc ctg aga cgc cct cgc    3030
256 Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu Arg Arg Pro Arg
257             825                 830                 835
259 tgc ctc ctg gag acc ctg cgg ttg gct ggc tgt ggc ctc aca gct gag    3078
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260 Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly Leu Thr Ala Glu
261         840             845             850
263 gac tgc aag gac ctt gcc ttt ggg ctg aga gcc aac cag acc ctg acc    3126
264 Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn Gln Thr Leu Thr
265         855             860             865
267 gag ctg gac ctg agc ttc aat gtg ctc acg gat gct gga gcc aaa cac    3174
268 Glu Leu Asp Leu Ser Phe Asn Val Leu Thr Asp Ala Gly Ala Lys His
269     870             875             880
271 ctt tgc cag aga ctg aga cag ccg agc tgc aag cta cag cga ctg cag    3222
272 Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu Gln Arg Leu Gln
273 885             890             895             900
275 ctg gtc agc tgt ggc ctc acg tct gac tgc tgc cag gac ctg gcc tct    3270
276 Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln Asp Leu Ala Ser
277             905             910             915
279 gtg ctt agt gcc agc ccc agc ctg aag gag cta gac ctg cag cag aac    3318
280 Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp Leu Gln Gln Asn
281             920             925             930
283 aac ctg gat gac gtt ggc gtg cga ctg ctc tgt gag ggg ctc agg cat    3366
284 Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu Gly Leu Arg His
285         935             940             945
287 cct gcc tgc aaa ctc ata cgc ctg ggg ctg gac cag aca act ctg agt    3414
288 Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln Thr Thr Leu Ser
289     950             955             960
291 gat gag atg agg cag gaa ctg agg gcc ctg gag cag gag aaa cct cag    3462
292 Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln Glu Lys Pro Gln
293 965             970             975             980
295 ctg ctc atc ttc agc aga cgg aaa cca agt gtg atg acc cct act gag    3510
296 Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met Thr Pro Thr Glu
297             985             990             995
299 ggc ctg gat acg gga gag atg agt aat agc aca tcc tca ctc aag cgg    3558
300 Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser Ser Leu Lys Arg
301             1000            1005            1010
303 cag aga ctc gga tca gag agg gcg gct tcc cat gtt gct cag gct aat    3606
304 Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His Val Ala Gln Ala Asn
305         1015            1020            1025
307 ctc aaa ctc ctg gac gtg agc aag atc ttc cca att gct gag att gca    3654
308 Leu Lys Leu Leu Asp Val Ser Lys Ile Phe Pro Ile Ala Glu Ile Ala
309     1030            1035            1040
311 gag gaa agc tcc cca gag gta gta ccg gtg gaa ctc ttg tgc gtg cct    3702
312 Glu Glu Ser Ser Pro Glu Val Val Pro Val Glu Leu Leu Cys Val Pro
313 1045            1050            1055            1060
315 tct cct gcc tct caa ggg gac ctg cat acg aag cct ttg ggg act gac    3750
316 Ser Pro Ala Ser Gln Gly Asp Leu His Thr Lys Pro Leu Gly Thr Asp
317             1065            1070            1075
319 gat gac ttc tgg ggc ccc acg ggg cct gtg gct act gag gta gtt gac    3798
320 Asp Asp Phe Trp Gly Pro Thr Gly Pro Val Ala Thr Glu Val Val Asp
321             1080            1085            1090
323 aaa gaa aag aac ttg tac cga gtt cac ttc cct gta gct ggc tcc tac    3846
324 Lys Glu Lys Asn Leu Tyr Arg Val His Phe Pro Val Ala Gly Ser Tyr
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